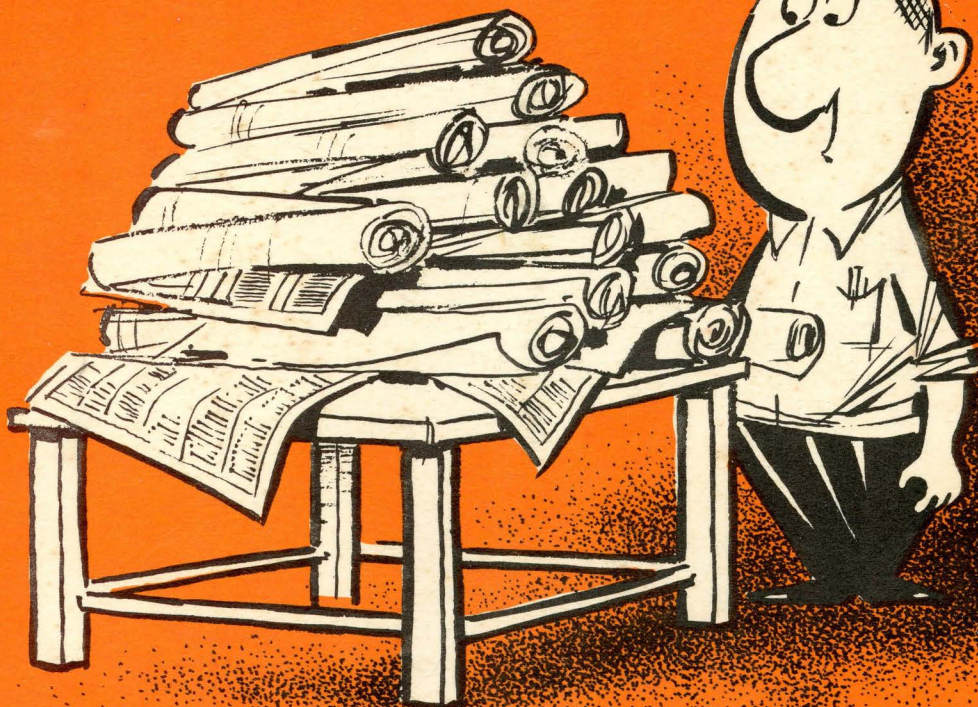


TM - 1000 Section 1



J & ED
Drawings



Western Electric

TCI Library www.telephonecollectors.info

Issued by
MANAGER, TECHNICAL TRAINING
(DEVELOPMENT)

First Edition
First Printing February 1970

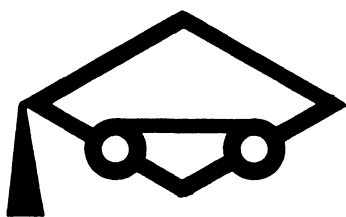
Second Edition
First Printing April 1971

This training material is intended only for use of Bell System employees and for Bell System purposes. Neither the material or any portion thereof is to be reproduced in any form, or distributed outside the System without written permission of the Manager, Technical Training (Development), Western Electric Company, Inc.

Training Manual • 1000

Section 1

J and ED Drawings



SECTION 1

J AND ED DRAWINGS

Lesson 1	J-DRAWING - Title Block
Lesson 2	J-DRAWING - Manufacturing and Engineering Notes
Lesson 3	J-DRAWING - Table A
Lesson 4	J-DRAWING - Associated Drawings and Wiring Tables
Lesson 5	J-DRAWING - Stock List and Table B
Lesson 6	J-DRAWING - Miscellaneous Tables
Lesson 7	ED-DRAWINGS - Basic Concepts

DRAWING J-00005A-1 Sheet 1	Issue 2 (Attachment A)
DRAWING J-00005A-1 Sheet 2	Issue 2 (Attachment B)
DRAWING ED-12345-30 Sheet 1	Issue 4 (Attachment C)
DRAWING ED-12345-30 Sheet 2	Issue 4 (Attachment D)

Issued by
Manager, Technical Training
(Development)

Printed in U.S.A.

J-DRAWINGS
TITLE BLOCK

OBJECTIVES :

At the conclusion of this Lesson you will be able to :

Identify the items which appear in the Title Block of a
Standard Western Electric Company J-Drawing.

List the items which have been changed from the previous
issue of the drawing and determine the latest issue from
the Sheet Index.

Training Manual 1000 - Sec. 1 - L1
Western Electric Company, Incorporated
Technical Training - Service Divisions

STANDARD EQUIPMENT SPECIFICATIONS are known as J-Specifications or J-Drawings. J-Drawings are prepared by the Engineering Department of the Manufacturing Organization from Bell Telephone Laboratories J-Specifications.

Each Bell Telephone Laboratories J-Specification covers a certain type of equipment. All equipment belonging to the same family is identified by the same J-Number. The equipment is subdivided into sections, each section containing a component unit of the overall equipment. A letter, or letters, following the J-Number identifies the component unit.

Example :

J-58829A is the J-Specification for a Number 756 PBX Switchboard.

J-58829B-2 is the J-Specification for the Number 1 Slide.

J-58829AC is the J-Specification for the Touch-Tone Translation Unit.

The J-58829B-2 and J-58829AC units are part of the 756 Switchboard. These are component units having the same J-Number and belonging to the same family.

The J-Number on the Western Electric Company J-Drawings is the same Number which appears on the Bell Telephone Laboratories J-Specification. However, the Western Electric Number will be followed by a dash (-) Number.

Example :

J-58829A-1 is the Western Electric Number for a 756A
Switchboard.

J-58829B-2 is the J-Number for the Number 1 Slide.

J-58829AC-2 is the J-Number for the Touch-Tone Dialing
Translation Unit.

The system of using dash (-) Numbers allows the Western Electric
Manufacturing Organization to redesign its specifications for
manufacturing purposes while retaining the same J-Number.

Example :

Western Electric Vintage 1 - J-58829B-1

Western Electric Vintage 2 - J-58829B-2

Western Electric Vintage 3 - J-58829B-3

If a dash one (-1) drawing is replaced with a dash two (-2)
drawing, the dash one (-1) drawing must be rated "Manufacture
Discontinued".

Definition :

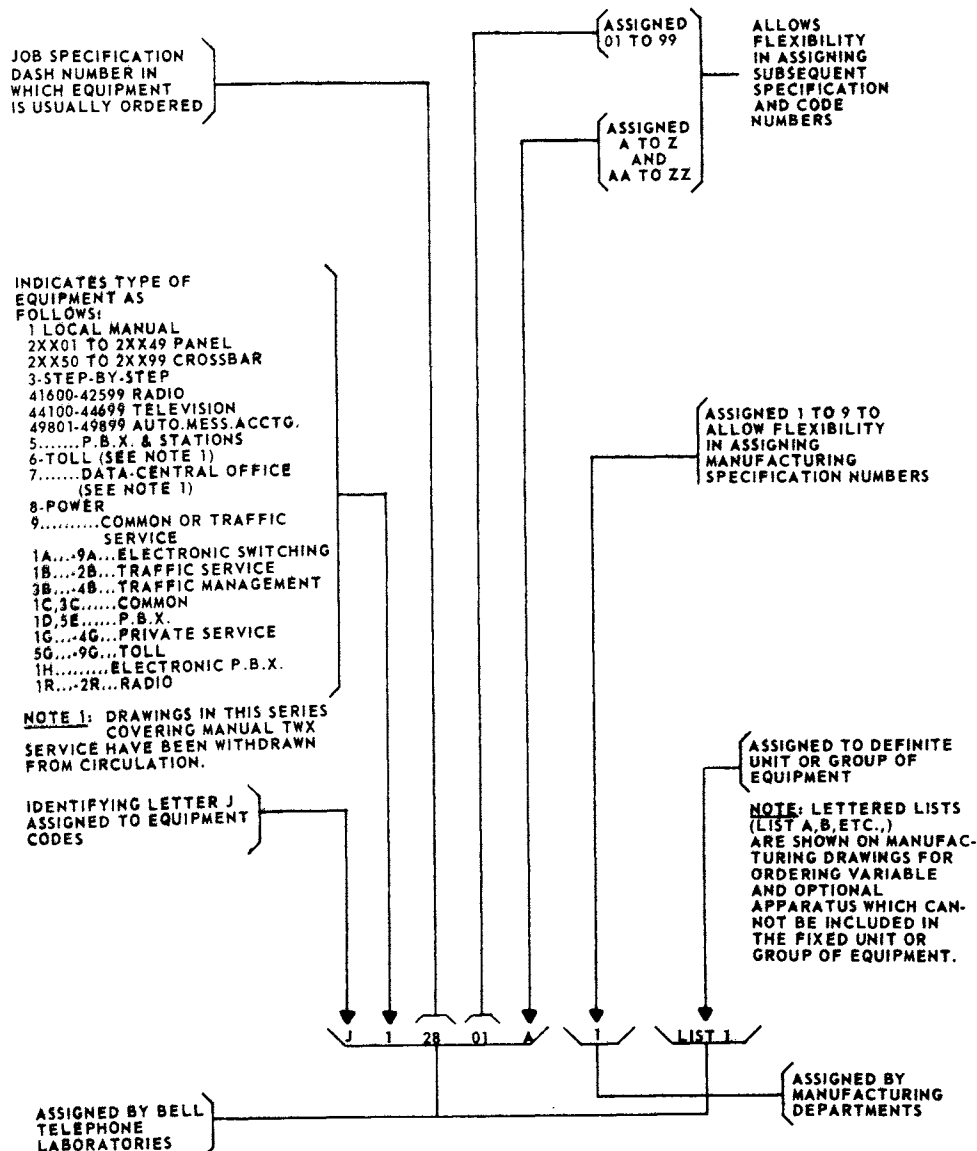
"Manufacture Discontinued" is a rating assigned to a
unit which is no longer being manufactured at any
manufacturing location.

Training Manual 1000 - Sec. 1 - L1
 Western Electric Company, Incorporated
 Technical Training - Service Divisions

However, units which have been rated "Manufacture Discontinued" are still being used in the field and are subject to updating, conversion, modification, and repair.

When a unit is replaced by a new vintage, (higher dash number) it must be electrically and mechanically interchangeable with the vintage which has been replaced.

The J-Numbering System is defined as follows :



A Title Block similar to those found on Standard Western Electric Company J-Drawings is shown in Fig. 1.

		2
J-00005 A-1	AT&T CO. RATING AT&T CO. STANDARD	
	W.E. CO. RATING STANDARD	
	J-00005 A-1	
	DWG-SIZE X 85	2 SHEETS, SHEET 1

FIG. 1

The J-Drawing Number appears in the lower right hand corner of the Title Block.

Western Electric J-Drawings often consist of more than one (1) sheet. Sheet 1 is the Index Sheet of the drawing. The number of sheets per drawing is indicated in the right hand corner of the Title Block directly under the J-Drawing Number.

Example : (See Fig. 1).

2 Sheets, Sheet 1 (First Drawing).

2 Sheets, Sheet 2 (Second Drawing).

In the upper right hand corner of the Title Block in Fig. 1 is the Issue Number of the Drawing.

It is important that the latest issue of the drawing be used in the repair, updating, modification, or conversion of a piece of equipment.

The "Title" of the drawing will be shown in the Title Block along with supplementary information which will be useful to the Engineer, Installer, or Repairman in the identification of the product.

Information in the Title Block may include the following :

Name of Unit

Brief Description of Circuit Features

Capacity of Unit in Amount of Circuits

Where it is Used

Physical Dimensions

Example :

The Title Block in Fig. 2 contains information which one may expect to find on a Standard J-Drawing.

J27250 R-1 CROSSBAR SYSTEM TANDEM OFFICE SPECIFICATION FOR REVERTIVE, DIAL, OR MULTIFREQUENCY PULSING REPEATED REVERSE BATTERY SUPERVISION TANDEM TRUNK UNIT ARRANGED FOR RERING FROM ORIGINATING END ASSEMBLY, EQUIPMENT, & LOCAL CABLE 30-1/2 TWO CIRCUIT, 3 MOUNTING PLATE UNIT MOUNTED ON NON ZONE TRUNK FRAME		7
		AT&T CO. RATING AT&T CO. STANDARD
		W.E. CO. RATING STANDARD
		J27250 R-1 9 SHEETS, SHEET 1
WESTERN ELECTRIC CO. INC.	DWG-SIZE X 85	

FIG. 2

J-Drawings are "Rated" by the American Telephone & Telegraph Co. (A.T. & T.) and Western Electric Co.

The Rating of the drawing is shown in the Title Block above the J-Number as shown in the partial view of Fig. 2

		7	
		AT&T CO. RATING AT&T CO. STANDARD	← RATING
		W.E. CO. RATING STANDARD	← RATING
		J 27250 R-1 9 SHEETS, SHEET 1	

FIG. 2 PARTIAL

A list of ratings and their description are shown below :

<u>RATING</u>	<u>DESCRIPTION OF RATING</u>	<u>BELL LAB. APPROVAL REQ'D TO APPLY</u>
STANDARD	INDICATES DRAWING CONFORMS WITH STANDARD PRACTICES	NO
PROVISIONAL	INDICATES DRAWING IS IN PRO- CESS OF STANDARDIZATION AND GENERALLY CONFORMS WITH EXIST- ING STANDARD PRACTICES	YES, UNLESS DRAWING IS SHOWN ON STANDARD KEY SHEET
STANDARD FOR A & M ONLY	SAME AS STANDARD EXCEPT THAT THE ASSOCIATED EQUIPMENT HAS BEEN RATED A & M ONLY	NO
A & M ONLY	INDICATES DRAWING IS TO BE USED FOR ADDITIONS AND MAINTENANCE ONLY COVERS EQUIPMENT WHICH MAY NOT BE LATEST AVAILABLE	NO
SPECIAL	INDICATES DRAWING COVERS SPECIAL FEATURES, USUALLY FOR ONE JOB OR OFFICE FOR WHICH STANDARD- IZATION IS NOT PLANNED	YES
A.T.&T. CO. SPECIAL	SAME AS SPECIAL	YES AND BELL LAB. MUST ADVISE A.T.&T. CO.
PRELIMINARY	DRAWING COVERS FEATURES IN EARLY STAGES OF DEVELOPMENT AND GENERALLY USED ON TRIAL INSTALLATIONS	YES
MFG DISC	DRAWING HAS BEEN DISCONTINUED FOR USE EXCEPT TO EQUIP CIRCUITS ALREADY WIRED	YES, FOR MAJOR ADDITIONS
A&M FOR MFG DISC	THIS IS A SPECIAL RATING FOR NEW DRAWINGS THAT HAVE BEEN PREPARED TO COVER MODIFICATIONS OF EXISTING EQUIPMENT THAT HAVE BEEN RATED (MFG DISC)	NO
INFORMATION	ISSUED FOR EDUCATIONAL AND INFORMA- TION PURPOSES ONLY. NOT FOR MANUFAC- TURING PURPOSES	

Sheet Index Notes are located above the Title Block. The Notes are for the convenience of the Drafting Organization, Manufacturing Engineers, and Standard Engineers. Since these Notes are of no particular value to the Repairman, they will not be discussed in this Lesson.

However, it is important to understand the Sheet Index itself.

The Sheet Index is normally shown as in Fig. 3.

SHEET INDEX								
SHT NO	ISSUE							
1	1	2						
2	1	1						
3	1	1						

FIG. 3

The first column gives the sheet number of the drawing. Fig. 3 indicates there are 3 sheets to J-00005A-1.

The remaining columns are utilized to enter issue numbers. The highest number on a line (reading horizontally) is the latest issue of the drawing.

Training Manual 1000 - Sec. 1 - L1
Western Electric Company, Incorporated
Technical Training - Service Divisions

For Example :

Two numbers appear to the right of the sheet number column for each of the three sheets.

For sheet No. 1, the second column to the right contains the number 2. This tells the reader that sheet 1 has been reissued.

Sheets 2 & 3 continue the number 1 in the second column. This indicates that only sheet 1 has been reissued and there are no changes on sheets 2 or 3.

Hence, the highest number entered in the issue column is the latest issue number for the sheet.

When any sheet of the J-Drawing has been changed, the reason for the change must be recorded on the Index Sheet. (Sheet 1). This information is located along the right hand margin of the drawing. Following the reason for the change, or changes, is a block containing the new issue number of the drawing and the Engineering Personnel responsible for making the change.

Figure 4 shows the arrangement of this information.

<i>Dist</i> <i>JRM.</i>	<i>B.D. Y.</i>	<i>C. J. J.</i>	1		
IN S.L. LINE 186 ADDED IN TABLE B LINE 52 COL. AK, 144 ADDED LINE 6 ADDED. NOTE 53 ADDED 6-27-62 AT&T CL NONE W.E. CO. B.					
<i>Cum</i> <i>W.F.S.</i>	<i>C.R.V.</i>	<i>S.V.H.T.</i>	2		

FIG. 4

FIG. 4

Note that no information precedes the Issue 1 Block. This column is for additions, deletions, and changes only. Since Issue 1 is the original issue of the drawing, no information will appear in this Block.

Issued by
 Manager, Technical Training
 (Development)

J-DRAWINGS
MANUFACTURING AND ENGINEERING NOTES

OBJECTIVES :

At the conclusion of this Lesson you will be able to :

Locate Manufacturing and Engineering Notes on the J-Drawing.

Identify common symbols used in conjunction with Manufacturing Notes.

Determine if the note relates to the Shop or Installation.

Locate the BSP Reference Number.

List Drawing Numbers and related information which appear in these notes.

Most Western Electric Co. J-Drawings contain Manufacturing Notes. These notes are numbered beginning with the Number 1. The purpose of these notes is to provide the Shop and Installer with the following information.

1. Shipping and assembly instructions for specific Stock List items. (Generally listed first).
2. Explanation of symbols used on the drawing.
3. Job stamping and unit identification information.
4. Variety of other instructions relevant to the manufacture and installation of the equipment.

Manufacturing Notes are arranged to distinguish between notes affecting the Shop and notes relevant to Installation. Many notes are common to both Shop and Installation.

Manufacturing Notes normally begin in the Second Column from the right hand margin on the first sheet of the J-Drawing. Continuation of these notes may appear elsewhere on the drawing wherever space exist. Occasionally, it may be necessary to continue these notes on the second sheet of the drawing.

To the left of the Manufacturing Notes are two columns marked Shop and Inst. (Installation). An "X" is placed in the column appropriate to each Manufacturing Note. Notes which convey the meaning of symbols are common to both Shop and Installation and are not designated with an "X" in either column.

Some typical Manufacturing Notes which one may expect to find on a J-Drawing are shown in Figure 1.

		MANUFACTURING NOTES	
SHOP	INST.		
		1.  PARTS (A) REQUIRED FOR MANUFACTURER WHEN EQUIPMENT INVOLVED IS SHOP MOUNTED OR (B) TO BE SHIPPED ATTACHED TO, OR ENCLOSED IN THE SAME CONTAINER WITH THE ASSOCIATED ASSEMBLED ITEM WHEN FIELD MOUNTED.	
		2. () INDICATES DESIGNATIONS TO BE STAMPED IN ACCORDANCE WITH JOB INFORMATION.	
		3. [] INDICATES DESIGNATIONS SHOWN FOR INFORMATION ONLY AND ARE NOT TO BE STAMPED.	
		4. < > INDICATES DESIGNATIONS WHICH ARE PROVIDED IN ACCORDANCE WITH OTHER INFORMATION.	
X		5. MOUNTING PLATES TO BE SURFACE WIRED IN ACCORDANCE WITH SWJ-00005A-1.	

FIG. 1

Notes one (1) thru four (4) are Standard Notes. Each standard note is always preceded by a symbol. Whenever the symbol appears elsewhere on the drawing, either in the Stock List or on a sketch, it immediately refers the reader to the Manufacturing Note. Examples of this relationship will be explained in later lessons.

Additional standard notes which are frequently used are shown below.



Parts required for manufacture when equipment is to be shop mounted or by the installer when the equipment is to be mounted by the installer.



Parts required for installation.



Parts that are to be shipped attached to, or enclosed in the same container with the associated assembled unit.

○ or ○ Indicates designations to be stamped on wiring side only.

Fig. 2 shows notes five (5) thru (7) of J-00005A-1.

SHOP	INST.	MANUFACTURING NOTES (CON'T)															
X		5. MOUNTING PLATES TO BE SURFACE WIRED IN ACCORDANCE WITH SWJ-00005A-1.															
	X	6. TRUNK FRAME NUMBERS AND SENDER NUMBERS SHALL BE STAMPED IN ACCORDANCE WITH THE FOLLOWING.															
		<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="2">SDR TRK CONN. FR. NO.</th> <th colspan="2">TRUNK FRAME NOS.</th> <th rowspan="2">SDR. NOS.</th> <th rowspan="2">SDR GRP NO.</th> </tr> <tr> <th>FOR GR. A</th> <th>FOR GR. B</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1-5</td> <td>10-15</td> <td rowspan="2">1-20</td> <td rowspan="2">1</td> </tr> <tr> <td>2</td> <td>6-10</td> <td>16-20</td> </tr> </tbody> </table>	SDR TRK CONN. FR. NO.	TRUNK FRAME NOS.		SDR. NOS.	SDR GRP NO.	FOR GR. A	FOR GR. B	1	1-5	10-15	1-20	1	2	6-10	16-20
SDR TRK CONN. FR. NO.	TRUNK FRAME NOS.			SDR. NOS.	SDR GRP NO.												
	FOR GR. A	FOR GR. B															
1	1-5	10-15	1-20	1													
2	6-10	16-20															
		<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tbody> <tr> <td>9</td> <td>81-85</td> <td>91-95</td> <td rowspan="2">81-100</td> <td rowspan="2">5</td> </tr> <tr> <td>10</td> <td>86-90</td> <td>95-100</td> </tr> </tbody> </table>	9	81-85	91-95	81-100	5	10	86-90	95-100							
9	81-85	91-95	81-100	5													
10	86-90	95-100															
X	X	7. T-00009-31 FIGURES 2&4 ARE FOR ODD NUMBERS. STC FRs AND FIGURES 3&5 ARE FOR EVEN NUMBERED STC FRs.															

FIG. 2

Note 5 is referring the reader to another drawing - SWJ-00005A-1. This drawing is a "Surface Wiring Running List" and is associated with J-00005A-1.

Quite often a Manufacturing Note will refer the reader to another drawing, chart, list, or table. It is important to understand the content of each note since these are "roadsigns which point the way". Although there will be many times when the information contained in these notes will be of no value to the repairman, it is recommended that they always be read as a precautionary measure.

Manufacturing Note 6 is a table containing stamping requirements for ten (10) Sender Trunk Connector Frames. (SDR, TRK. CONN. FR).

Note the "X" marked in the shop column.

This indicates that the unit should be stamped at the Manufacturing or Repair location.

Manufacturing Note No. 7 is similar to Note 5 in that they both refer to another drawing.

The Manufacturing Notes which have been covered in this lesson represent only a small percentage of the various type notes which will be found on J-Drawings.

ENGINEERING NOTES.

Engineering Notes are placed on a J-Drawing for the convenience of the Engineer, Installer, or Repairman. They pertain to requirements which control the design, function, application, or appearance of a unit. Often they supply the Engineer with specific ordering information to cover special conditions. While many of these notes may be of no value to the Repairman, it is recommended that all notes be read to determine if they apply to the specific task to be performed.

Engineering notes begin with the number 51. Note 51 shall consist of a block containing the drawing number and the applicable BSP issue (s) and appendices.

Engineering Note No. 51 shall be arranged as shown in Fig. 3.

51.	THIS DRAWING AGREES WITH ISSUE		1			
	BSP. AA 000.008	ISSUE	1			
		APPX				

FIG. 3

Note 51 states that J-00005A-1, Issue 1, agrees with BSP-AA 000.008 Issue 1.

Definition :

The term BSP stands for Bell System Practice. It is a document prepared by Bell Telephone Laboratories and contains information pertaining to the design, application, testing requirements (function) and appearance of a unit.

Notice that J-00005A-1 is Issue No. 2. Note 51 states that issue 1 of the drawing agrees with issue 1 of the BSP.

When a drawing issue is changed, the electric and mechanical requirements generally do not change enough to require the reissuing of the BSP. However, a change in vintage from J-00005A-1 to J-00005A-2 would probably effect a change in the BSP.

Engineering Notes 52 and 53 point out two additional areas of information on the J-Drawing.

52. For mounting place drilling data not apparent in Stock List, see Table B.

Engineering Note 52 is referring to Table B. Table B contains drilling information which is not apparent in the Stock List. Notice that Note 52 does not refer to some other drawing. Therefore, it must be assumed that Table B is part of drawing J-00005A-1.

Engineering Note No. 53 reads as follows :

53. This frame shall be equipped with units as required in accordance with Table C. The component units shall be wired and equipped in accordance with unit J-Drawings.

In summarizing, Engineering Notes pertain to requirements which control the design, function, application, and appearance of the unit.

Application of Engineering Notes will become apparent in later lessons.

Issued by
Manager, Technical Training
(Development)

J-DRAWINGS

TABLE A

OBJECTIVES :

At the conclusion of this Lesson you will be able to :

List the equipment required for a given job.

Determine the rating of the List or Groups.

Identify the basic list or group and optional lists or groups which may apply to the equipment.

List the number of circuits which are furnished per list or group.

Identify the Wiring Drawing number(s) of the circuit being equipped.

Select the figure(s) associated with the list or group.

List the wiring option(s) for each list or group.

List the apparatus option(s) which are furnished with each list or group.

Table A contains list or group descriptions and associated equipped circuits needed in the make-up of a particular equipment code. Table A will appear on most standard Western Electric J-Drawings.

The Table consists of eight (8) Columns designated alphabetically A thru H. Each Column contains an integral list of information essential to the make-up of a specific equipment code.

Table A will appear on the drawing as shown in Figure 1.

TABLE A								
COL	A	B	C	D	E	F	G	H
EQUIPMENT	RAT- ING	LIST	NO.	CIRCUITS AND FIGURES EQUIPPED				
				CKT.	FIG.	WRG.	APP	

FIG. 1

Column A - Equipment

Column A sets forth the criteria employed by the Engineer in ordering, wiring, and equipping the list or groups for a specified job.

Column B - Rating

Column B shows the rating of the list or groups when they are different from the Specification Drawing.

TABLE A								
COL.	A	B	C	D	E	F	G	H
EQUIPMENT	RAT- ING	LIST	NO.	CIRCUITS AND FIGURES EQUIPPED				
				CKT.	FIG.	WRG.	APP	

FIG. 1 (CON'T)

Column C - List (or Group).

List or group numbers are assigned to subdivide the units of the equipment and to provide optional features.

The main list or group covers the common or basic equipment.
Other list or groups cover equipment or apparatus required
in addition to the main list or group to provide supplementary
or optional features to the basic unit.

Lettered list, which will appear in Column "C" of Table "A",
order equipment required for operating or maintenance
purposes. These lists are also used to separate equipment from a numbered list for the convenience of manufacture.

Optional list for Wiring are assigned letter designations prefixed with the letter "W".

Optional list for Test and Adjust are assigned letter designations prefixed with the letter "T".

Training Manual 1000 - Sec. 1 - L3
 Western Electric Company, Incorporated
 Technical Training - Service Divisions

TABLE A								
COL	A	B	C	D	E	F	G	H
EQUIPMENT		RAT- ING	LIST	NO.	CIRCUITS	AND		FIGURES EQUIPPED
					CKT.	FIG.	WRG.	APP

Fig. 1 (Con't)

Column C - (Cont.).

Optional list for stamping are assigned letter designations prefixed with the letter "S".

Column D - Number

Column D shows the quantity of circuits which are furnished per list or group.

Column E - Circuit

Column E which is headed "circuit" shows the wiring diagram number of the circuit being equipped.

Column F - Figure

Column F shows the drawing figures which apply to each list or group.

Column G - Wiring

Column G shows the wiring options available per list or group.

TABLE A								
COL	A	B	C	D	E	F	G	H
EQUIPMENT	RAT- ING	LIST	NO.	CIRCUITS AND FIGURES EQUIPPED				
				CKT.	FIG.	WRG.	APP	

Fig. 1 (Con't)

Column H - Apparatus

Column H shows the apparatus options available per list or group.

TABLE A								
COL	A	B	C	D	E	F	G	H
EQUIPMENT	RAT- ING	LIST	NO.	CIRCUITS AND FIGURES EQUIPPED				
				CKT.	FIG.	WRG.	APP	
FRAMEWORK ASSEMBLY, & COMMON EQUIPMENT FOR ONE SENDER TRUNK CONNECTOR FRAME EQUIPPED FOR TOP 50- TRUNK SENDER CONNECTOR UNIT & FOR TEN TRUNKS & ONE SENDER		1	1	T-00007-31	1,2,4	(SEE NOTE 7)		
			5	T-00009-30	1,1A			
			1	T-00009-30	2 OR 3			
			5	T-00009-30	6,7,8			
			1	T-00009-30	9		13	13

FIG. 2

In analyzing Table "A", first refer to Column C to determine the List Number of the unit. In the case of Figure 2, the unit is List 1.

Column A states that a List 1 unit consist of:

Framework, Assembly and common equipment for one (1) Sender Trunk Connector Frame equipped for top 50 trunk sender connector unit and for 10 trunks and one (1) sender.

Column B is vacant which indicates the rating of the List 1 unit is the same as the specification drawing - in this case Standard.

Columns D thru H are best understood if they are read Horizontally one Line at a time.

Example :

The first figure appearing in Column D is 1.
Column E contains drawing number T-00007-31
Column F refers to Figures 1, 2, & 4 on T-00007-31
Columns G and H are vacant.

Assembling this information into a single statement, it now reads.

One (1) circuit per T-00007-31, Figures 1, 2, & 4 with no wiring or apparatus options.

The List 1 unit also contains :

One (1) circuit per T-00009-30 Figure 2 or 3, with wiring and apparatus option per Note 7.

Five (5) circuits per T-00009-30, Fig. 6, 7, 8 with no options.

One (1) circuit per T-00009-30, Fig. 9 with wiring and apparatus option No. 13.

All of the circuits and options which have been discussed up to this point are part of the List 1 unit.

Additional lists may be added to the List 1 unit to increase its operative capacity.

For Example :

List 2 adds the Bottom 50 - Trunk Sender Trunk Connector Unit to the Basic Unit. Circuit requirements for List 2 are shown in Columns D thru H.

Circuit information for List 2 thru 5 is contained in Column D thru H and should be analyzed as discussed in the List 1 presentation.

In addition to numbered list, Table A also contains lettered list - A and B.

Lettered lists order equipment required for operating or maintenance purposes. These lists are also used to separate equipment from a numbered list for the convenience of manufacture.

Example :

List A contains the following information :

Cable support required in addition to list of top sender equipment and/or bottom trunk frame equipment in each finder group when these sender connectors or trunk connectors are not equipped.

List A is required for operating and maintenance purposes.

List B in Table A of J-00005A-1, is "Always" required in addition to List 1. It consist of :

2 circuits per J-00005V-1 Fig. L-WB.

List B has been added for the convenience of manufacture.

Notice that List B was not included in Issue 1 of the drawing but was added in Issue 2.

This information appears in the upper right hand corner of the drawing and was discussed in Lesson 1.

Additional lists pertain to specific items such as Stamping, Wiring Options, and Test and Adjust. These lists are prefixed with the letters S, W, and T respectively. Table A contains several examples of these lists.

In Column C of Table A, there appears List SA and List SB. Referring to Column A, it will be seen that stamping is specified in addition to the List 1 unit with SA stamping being required for even line-ups and SB stamping being required for odd line-ups.

A partial view of Figure E on Sheet 2 of J-00005A-1 is shown below :

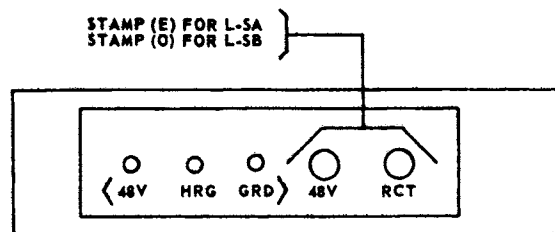


FIG. E (PARTIAL)

Manufacturing Note No. 2 states :

() Indicated designations to be stamped in accordance with job information.

Figure E shows two such designations :

(O) Odd for List SA.

(E) Even for List SB.

This stamping is job oriented and will be done by the Installer. Any Standard stamping will be done at the Manufacturing Location when the unit is assembled.

The last list in Table A is List WA which states :

Wiring required in addition to List 4 or 5 for the last equipped sender connector in each finder group.

Columns D thru H specify the number of circuits, drawing, apparatus, and wiring options.

Basic units other than List 1 units were mentioned earlier in this Lesson . Column B in Table A gives the Rating of the Unit. As was previously mentioned, Column B will contain no information if the rating of the list is the same as the specification drawing. However, there will be times when column B will contain the notation MD. (Manufacture Discontinued as discussed in Lesson 1). This tells the reader that this list number is no longer being manufactured.

When a List 1 unit, or basic unit, has been rated MD, it is obvious that another basic list must exist. This unit may be a List 2 or may be a higher list number.

In summarizing, the Table A shown on J-00005A-1 contains many examples of what one may expect to find on a Standard Western Electric Company J-Drawing. Although each J-Drawing will contain information which differs in technical content from the example given, the method of analyzing the information remains basically the same.

Issued by
Manager, Technical Training
(Development)

J-DRAWINGS
ASSOCIATED DRAWINGS AND WIRING TABLES

OBJECTIVES :

At the conclusion of this Lesson you will be able to :

Define Surface Wiring.

Define Local Cable Wiring.

List the Associated Drawings by name and number.

Identify Local Cable Drawings in conjunction with the list in
Table A.

Determine from the Local Cable Drawing Table which Lists in
Table A contain only Surface Wiring.

Identify the Circuit Drawings by Name, Schematic, and Drawing
Number.

Associate the Wired Circuits with the proper figure on the
drawing.

List the Circuits Wired and associate these with the Local
Cable Drawings.

The list of Associated Drawings and the Wiring List are contained in four (4) different sections of the Table. These sections are titled as follows :

1. List of Associated Drawings
2. Wiring provided in the Local Cable
3. Local Cable Drawings
4. Surface Wiring provided by the Shop.

The list of Associated Drawings, Wiring provided in the Local Cable, and Surface Wiring provided by the Shop sections are arranged vertically, one above the other, while the section containing Local Cable Drawings (when more than one (1) Local Cable is required) appears adjacent and to the right of the other sections.

The arrangement of these tables are shown on J-00005A-1 Sheet 1.

The List of Associated Drawings Table specifies the standard drawings required for Manufacture, Repair, and Installation. Drawings which fall into this category are those containing Stamping, Mounting and Assembly information and Engineering Notes.

Some of the drawings which normally fall into this category are as follows :

Fuse Panels, Equipment, Cross Connection Cable, Connecting Charts, Cable Details, Miscellaneous Connections, Critical Wiring Drawings, and Component Equipment Manufacturing Specifications. The list may also contain Maintenance type application drawings and SD Drawings covering printed wiring circuit packages used with the Equipment and Specification Drawings for printed wiring boards and AMPLAS assemblies.

The "List of Associated Drawings" is arranged as shown in Figure 1.

6	SOLDERING RECORD	SRJ00005A-1	12	JK KEY & LP. PAN ASSY.	ED-00005-51
5	SURFACE WIRING RUN LIST	SWJ00005A-1	11	AMA UNIT	J-00005K-90
4	MISC. MTG. DETAILS	ED00000-51	10	TRANSLATOR RELAY UNIT	J00005AB-50
3	LOCAL CABLE PLAN	ED-00007-01	9	AUX PLS UNIT	J-00005V-1
2	FUSE PANEL	ED-00005-59	8	SWBD. CABLE CONN. CHART	CCED-00005-10
1	FRAME ASSY.	ED-00003-30	7	AMA UNIT	J-00005R-2
LINE COL	NAME W	NUMBER X	LINE COL	NAME W	NUMBER X
LIST OF ASSOCIATED DRAWINGS DRAWINGS DESIGNATED ARE NOT REQUIRED BY THE INSTALLERS					

Fig. 1

The Associated Drawing Table provides two columns of 6 lines each for listing drawings other than SD or T drawings which may be associated with wiring.

Column W contains the name of the drawing

Column X contains the corresponding drawing number.

Notice that several of the drawing numbers are preceded by an equal (=) sign. These drawings are not required by the Installer but could be required by the Repair Shop.

The "Wiring List" shows the Wiring provided in the Local Cable, Wiring provided by the Installer, and/or Surface Wiring.

Definition - Surface Wiring

Surface Wiring is intra-unit wiring i.e; point-to-point wiring on the unit which is not laced.

Definition - Local Cable Wiring

Local Cable Wiring is inter-unit wiring i.e ; wiring between units of equipment in the same Bay. It is usually laced or banded.

The "Wiring provided in the Local Cable" Table specifies the circuits "wired for" in the Local Cable. This cable provides "Universal Wiring", i.e ; wiring for all the features in Table A regardless of whether or not these features are ordered by the Equipment Engineer for a particular unit. Initial provisions for "Universal Wiring" for shop wired units makes the addition of lists on future jobs a simple installation operation because it is necessary only to add and connect the additional apparatus.

The "Wiring provided in the Local Cable" Table is directly above the "List of Associated Drawings" as shown in Figure 2.

35	MISC CKT.	SD-00007-01	T-00007-31	4 2		1 1		
30	STC CKT.	SD-00009-01	T-00009-30	9 8 7 6	13	1 5 5 25		
25				4 OR 5		1		
21				2 OR 3 1B 1A 1	HA,HB	1 95 5 100		
LINE	NAME	SCHEMATIC	DWG. NO.	FIG.	OPT. WIRING	WIRED	NOTES	REMARKS
COL	M	N	P	R	S	T	U	V
CIRCUITS								
WIRING PROVIDED IN THE LOCAL CABLE								

FIG. 2

The Table is divided into eight (8) columns. Notice the similarity between columns P, R, S, and T of Figure 2 and columns E, F, G, and D of Table A.

The lines of the Table are numbered beginning with Number 21. When reading the information in the Table, it is necessary to begin on the line on which the circuit name appears (column M) and read downward.

Example :

Line 29 shows a Standard Trunk Connector Circuit equipped with one (1) circuit per Figure 9 of T-00009-30 and wiring option 13 in the Local Cable.

Having established the type of circuit, it is now possible to define the remaining circuit information contained in Lines 28 to 21.

To have begun with Line 21 would reveal only :

100 circuits per Fig. 1.

It is necessary to refer to Line 29 to determine the remaining information necessary to identify the unit.

The remaining columns in the Table are defined as follows :

Column N - gives the corresponding Schematic Drawing (SD) Number.

Column U is reserved for Reference to Notes.

Column V is reserved for Remarks governing the circuit under discussion.

"Surface Wiring provided by the Shop" appears directly above the "Wiring provided in the Local Cable" Table. Numbering of Columns is continuous from the preceding Table shown in Figure 2. Thus, the first number in the Surface Wiring Table is Number 36.

This Table is generally presented as seen in Figure 3.

40						
36	STC CKT	SD-00009-01	T-00009-30	AS COVERED IN TABLE A FOR LIST SPEC. IN ORDER		
SURFACE WIRING PROVIDED BY THE SHOP						
35						

FIG. 3

The Table states that the Surface Wiring for the Standard Trunk Connector Circuit (STC CKT) is found on Drawing T-00009-30 per the list specified in Table A.

Column E of Table A identifies the circuits for the various list. Notice that T-00009-30 is specified as the Surface Wiring Drawing for all list.

If additional Surface Wiring were required, the drawing number would appear in the "Surface Wiring provided by the Shop" Table and also in Column E of Table A.

In addition to the three Tables which have now been discussed in this Lesson, it is possible for a fourth Table to be present on the drawing. This Table is referred to as the "Local Cable" Table and appears only when more than one Local Cable is required.

This Table is arranged as seen in Figure 4.

Training Manual 1000 - Sec. 1-L4
 Western Electric Company, Incorporated
 Technical Training - Service Divisions

LCJ00005A-1 GRP 1 LIST 1	X	X	X
LCJ00005A-1 GRP 2 LIST 2	X		
LCJ00005A-1 GRP 3 LIST 2 OR 5			X
LC	G	LIST	
LC	G	LIST	
LC	G	LIST	
LC	G	LIST	
LC	G	LIST	
LC	G	LIST	
A			
LOCAL CABLE			

FIG. 4

The Table shows that three Local Cables are required for the equipment under discussion. The first cable, reading from the left, is LCJ-00005A-1 Grp 1 List 1. The LC preceding the J-Number indicates that the drawing is a Local Cable Drawing and is required for the List 1 equipment in Table A.

The "Local Cable" Table is read vertically while the "Wiring provided in the Local Cable" Table is read Horizontally.

FIG. 5

Example :

Line A provides one (1) circuit per Figure 4 of T-00007-31. Line A intersects with the first column of the Local Cable Table as indicated with an "X".

The Grp. 1 List 1 Cable is also wired for Reference lines, B, D, E, F, J, K, L.

FIG. 5

5 circuits per Figure 8 of T-00009-30 (Line D).

As was previously stated, the "Local Cable" Table is used only when more than one (1) Local Cable is required. When only one (1) cable is used, all of the wiring which appears in the "Wiring provided in the Local Cable" Table will be contained in a single cable.

Training Manual 1000 - Sec. 1-L4
Western Electric Company, Incorporated
Technical Training - Service Divisions

This Lesson has covered the application and use of the "Wiring Provided" Tables. A thorough understanding and working knowledge of these Tables will prove to be a most useful tool to the craftsman in the Repair Shop.

Issued by
Manager, Technical Training
(Development)

J-DRAWINGS
STOCK LIST AND TABLE "B"

OBJECTIVES :

At the completion of this Lesson you will be able to do the following with the Stock List.

Determine which codes are required for the various list.

Associate the description of an item with its proper code.

Identify the quantity of each code required per list.

Relate Stock List information to other tables on the drawing.

Determine which Manufacturing Notes apply to the listed items.

YOU WILL BE ABLE TO DO THE FOLLOWING WITH TABLE B.

Determine the code of the apparatus requiring additional drilling.

Associate the apparatus with the required sketch on the drawing.

List the positions which require additional drilling per sketch.

All material required for the equipment covered in a specification is ordered from a list designated as the Stock List. The Stock List includes component specification codes, framework, assemblies, subassemblies, panels, local cables, terminal strips, details, mounting plates, and miscellaneous items.

The Stock List is normally located along the left hand margin of the J-Drawing beginning at the top of the sheet.

The arrangement of the Stock List Columns is shown in Figure 1.

STOCKLIST						
AB	AC	AD	AE	AF	AG	COL
LIST	QUAN PER LIST	CODE	DESCRIPTION	NOTE		LINE

Fig. 1

Column AB contains the List Number, or Numbers. to which the items apply. The column may contain one list number or several list numbers. When more than one list is shown, the item is applicable to each list.

Column AC contains the quantity required per List. The quantities shown are required for the assembly of one (1) complete unit.

Column AD gives the Code Number of the item. Only code numbers of Western Electric Co. manufactured items appear in this column.

Column AE contains the description of the item. Items manufactured by outside suppliers may be shown in this column along with Western Electric manufactured items.

STOCKLIST						
AB	AC	AD	AE	AF	AG	COL
LIST	QUAN PER LIST	CODE	DESCRIPTION	NOTE		LINE

Fig. 1 (Con't)

Columns AF and AG are reserved for notes. Column AF contains notes which are designated with a Letter or Symbol. Column AG is provided for Numbered Notes.

The Line Column is for Reference Numbers. The Column shall begin with line 101 and all lines, including blank lines, shall be numbered accordingly. Line Numbers shall appear only on every fifth line of the Stock List.

Figure 2 shows lines 101 thru 111 of the Stock List on J-00005A-1, Sheet 1.

STOCKLIST						
AB	AC	AD	AE	AF	AG	COL
LIST	QUAN PER LIST	CODE	DESCRIPTION	NOTE		LINE
1	2	J00005V-1	LIST 1,2,WA AUX PLS UNIT			101
B	2	J00005V-1	LIST WB AUX PLS UNIT			
1	1	ED-00003-30	G-2 FRAME ASSY			105
1	1	ED-00005-59	G-11 FUSE PNL			
1	1	LCJ-00005A-1	G-1 LOCAL CABLE			
2	1	LCJ-00005A-1	G-2 LOCAL CABLE			110
2,5	1	LCJ-00005A-1	G-3 LOCAL CABLE			
						115

Fig. 2

Training Manual 1000 - Sec. 1-L5
 Western Electric Company, Incorporated
 Technical Training - Service Divisions

Line 101 states that a List 1 unit requires two (2) J-00005V-1 List 1, 2, WA, Aux. Pls. Unit (Auxiliary Pulsing Unit). Referring to the List 1 requirements in Table A, it will be seen that a J-00005V-1 unit is required.

The Drawing J-00005V-1 unit also appears in the List of Associated Drawings.

STOCKLIST						
AB	AC	AD	AE	AF	AG	COL
LIST	QUAN PER LIST	CODE	DESCRIPTION	NOTE		LINE
1	2	J00005V-1	LIST 1,2,WA AUX PLS UNIT			101
B	2	J00005V-1	LIST WB AUX PLS UNIT			
1	1	ED-00003-30	G-2 FRAME ASSY			105
1	1	ED-00005-59	G-11 FUSE PNL			
1	1	LCJ-00005A-1	G-1 LOCAL CABLE			
2	1	LCJ-00005A-1	G-2 LOCAL CABLE			110
2,5	1	LCJ-00005A-1	G-3 LOCAL CABLE			
						115

Fig. 2 (Con't)

Line 102 states that List B requires a J-00005V-1 List WB Aux. Pls. Unit. Referring to List B in Table A; observe that List B is always required in addition to List 1. Line 9 in the List of Associated Drawings is applicable to both lines 101 and 102 of the Stock List.

Lines 109, 110, and 111 specify the Local Cable requirements for the various list. Line 110 states that a List 1 unit requires a LCJ-00005A-1 G-1 Local Cable. Referring to the Local Cable Table, it can be determined what circuits the Grp. 1 cable is equipped with. (Lesson 4).

Notice that the ED-00005-59 Fuse Panel and ED-00003-30 Frame Assembly appear in the Stock List but do not appear in Table A. This is due to the fact that these items are required in addition to all lists of J-00005A-1. The J-00005V-1 unit is required specifically for the List 1 and List B units and is therefore shown in the appropriate column of Table A.

Quite often the Stock List will include items which are equipped with Terminal Strips, Relays, Capacitors, Resistors, Insulators, Etc. Any item so equipped will appear with the designation E/W (Equipped with). This is most common in the case of Mounting Plates.

Figure 3 shows lines 135 thru 140 of the Stock List on J-00005A-1.

1,2	1	189A	(2603) MTG PLT E/W SK C			135
1,2,3	5	59A	RES POS 4,18,32,46,60			
1,2,3	5	19DW	RES 11,24,39,53			
			67 MTD UPSIDE DOWN			
1,2,3	5	AJ46	REL 82,95,109,121,134			
1,2	1	D2A	TS 155			140

Fig. 3

Line 135 tells the reader that a List 1 and List 2 unit each require a 189A Mounting Plate E/W lines 136 thru 140. It also tells the reader to refer to Sketch C.

Figure D (Sk C) on Sheet 2 of J-00005A-1 shows a 189 A Mounting Plate. However, the information contained in the sketch may not be adequate to equip the plate per the information in the Stock List. It now becomes necessary to proceed to the Card Catalog of Western Electric Manufactured Items and locate the card for a 189 A Mounting Plate.

Training Manual 1000 - Sec. 1-L5
 Western Electric Company, Incorporated
 Technical Training - Service Divisions

This card is reproduced in Figure 4.

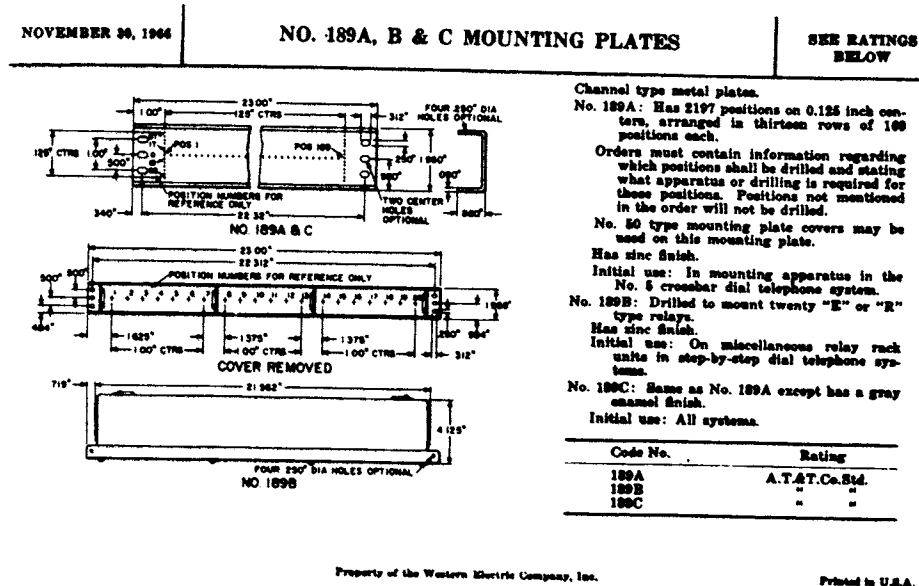


Fig. 4

The card states that a 189 A Mounting Plate has 2197 positions on 0.125 inch centers, arranged in thirteen rows of 169 positions each.

The sketch on the card shows the reference numbers for all of the positions. Utilizing this information, it is possible to equip the Mounting Plate per the information in the Stock List.

Unless otherwise specified, components listed in the Stock List should be mounted on the Zero Reference Line of the Mounting Plate.

Figure 5 shows an exploded view of the 189 A Mounting Plate with the Zero Reference Line pointed out.

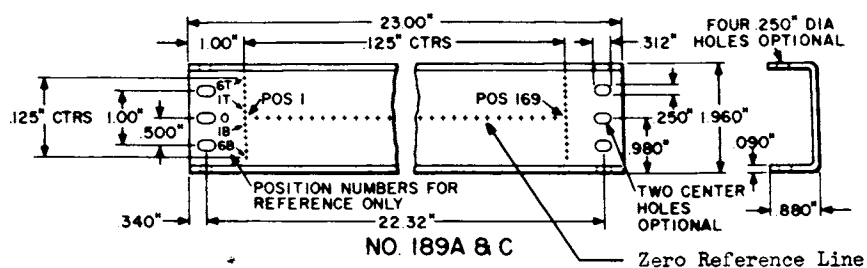


Fig. 5

Referring again to the Stock List shown in Figure 3, the placement of the components on the Mounting Plate can now be determined.

1,2	1	189A	(2603) MTG PLT E/W SK C		135
1,2,3	5	59A	RES POS 4,18,32,46,60		
1,2,3	5	19DW	RES 11,24,39,53		
			67 MTD UPSIDE DOWN		
1,2,3	5	AJ46	REL 82,95,109,121,134		
1,2	1	D2A	TS 155		140

Fig. 3

Line 136 states that a List 1, 2, and 3 each require five (5) 59A Resistors. One resistor is to be mounted in position 4 on the Mounting Plate. The remaining 4 resistors are to be mounted in positions 18, 32, 46, and 60. Remember, all of these components are mounted on the Zero Reference Line of the 189A Mounting Plate.

Line 137 states that List 1, 2, and 3 each require five (5) 19DW Resistors mounted in positions 11, 24, 39, and 53. It also specifies that one (1) 19DW resistor be mounted in position 67 but is to be mounted upside down.

It again becomes necessary to refer to the Card Catalog of Western Electric Manufactured Items to determine the value and physical characteristics of the 19DW resistor.

It also becomes necessary to refer to the BSP Index and locate the BSP for 19 Type Resistors.

With this information, it is possible to equip the 189A Mounting Plate in accordance with the Stock List.

The Columns of the Stock List were previously defined in terms of the information which they contain.

Columns AF and AG are reserved for reference to Manufacturing Notes.

Observe Lines 113 and 126 on the Stock List.

Column AG contains the number 5. Referring to the Manufacturing Notes, Note 5 tells the reader :

5 Mounting Plates to be Surface Wired in accordance with
SWJ-00005 A-1.

Referring to the List of Associated Drawings, it will be seen that SWJ-00005 A-1 is the Surface Wiring Running List.

Quite often Manufacturing Notes are designated by symbols. Common symbols frequently used on J-Drawings were discussed in Lesson 2.

Figure 6 shows lines 181, 182, 183 of the Stock List on J-00005A-1, Sheet 1.

					180
3,4,5	4	P-353446	SPL RHM SCR. .216-.24x3.8		
A	2	P-353447	SPL RHM SCR. .216-.24x1.2		
A	2	P-423635	ITTLW, STL .025		
					185

Fig. 6

Columns AF and AG contain reference symbols. Referring to the Manufacturing Notes, it will be seen that these symbols refer to Note 1 which states :



Parts (A) required for manufacture when equipment included is shop mounted or (B) to be shipped attached to, or enclosed in the same container with, the associated assembled items when field mounted.

Notice that both columns AF and AG are required to accommodate this reference to the Manufacturing Note.

Quite often it is necessary to abbreviate items in the description column in order to include all the information required.

Lines 181 thru 183 of the Stock List shown in Figure 6 utilize standard abbreviations in the description column.

Bell System Practices No. 005 - 101 - 111 list the standard abbreviations and letter symbols for use on drawings, product marking, and in text.

When required, a table is added on the J-Drawing to show the Mounting Plate position drillings not apparent in the Stock List. This becomes necessary when the positions covered are either unequipped or it is desired to specify drilling spacing to accommodate a larger but similar type component than that actually called for in the Drawing Stock List. This Table shall be designated Table B.

Information in Table B is shown with the sketches (Sk) arranged Vertically and the types of apparatus drilled for arranged Horizontally.

Figure 7 shows the arrangement of Table B.

U REL			75,91,103,116, 129,141
D4A TS	10	155	
DRILL FOR	SK A	SK C	SK D
	POSITIONS IN		
DRILLINGS FOR WIRE SPRING RELAYS ON 1-1/2 INCH HORIZONTAL MOUNTING CENTERS UNLESS OTHERWISE SPEC.			
TABLE B			

Fig. 7

For reasons of convenience, Table B may also be shown on the drawing in the reverse manner as seen in Figure 8.

TABLE B			
DRILLINGS FOR WIRE SPRING RELAYS ON 1-1/2 INCH HORIZONTAL MOUNTING CENTERS UNLESS OTHERWISE SPEC.			
	POSITIONS IN		
	SK A	SK B	SK C

Fig. 8

Referring again to Figure 7, the left hand column designates the item "Drilled For". The column in Figure 7 contains 2 items :

1. D4A TS (Terminal Strip).
2. U REL (Relay).

U REL			75,91,103,116, 129,141
D4A TS	10	155	
DRILL FOR	SK A	SK C	SK D
	POSITIONS IN		
DRILLINGS FOR WIRE SPRING RELAYS ON 1-1/2 INCH HORIZONTAL MOUNTING CENTERS UNLESS OTHERWISE SPEC.			
TABLE B			

Fig. 7

Directly to the right of the "Drill For" column are the Sketch References. Figure 7 shows that three sketches - Sk A, Sk C, Sk D - must be referred to in order to accomplish the drilling required.

U REL			75,91,103,116, 129,141
D4A TS	10	155	
DRILL FOR	SK A	SK C	SK D
	POSITIONS IN		
DRILLINGS FOR WIRE SPRING RELAYS ON 1-1/2 INCH HORIZONTAL MOUNTING CENTERS UNLESS OTHERWISE SPEC.			
TABLE B			

Fig. 7

Beginning with the D4A TS in the "Drilled For" column and reading to the right, it will be seen that drilling is required for :

Position 10 on Sketch A.

Position 155 on Sketch C.

Notice that no drilling for the D4A TS is required per Sk D.

Since it is not otherwise stated, the positions to be drilled are on the Zero Reference Line of the Mounting Plate.

Referring to Line 114 in the Stock List, it will be seen that a D3A Terminal Strip is to be mounted in position 10 per sketch A.

Likewise, Line 140 in the Stock List states that a D2A Terminal Strip is to be mounted in position 155 per Sketch C.

The purpose of drilling these positions for a D4A Terminal Strip instead of a D3A and D2A TS respectively is to allow both of the above items to be changed to a D4A Terminal Strip in the field without additional drilling being required.

Table B also specifies drilling for a U Relay in six (6) positions per Sketch D (Figure 7). Referring to Lines 143 thru 151 of the Stock List, it will be seen that no U Type Relays are required. Here again provisions have been made for the addition of these items in the field.

Since it is not otherwise specified, these positions are also on the Zero Reference Line of the Mounting Plate.

Most of the time, it will not be required to perform the additional drilling required in Table B, since it will most probably have been done at the Manufacturing Location.

Issued by
Manager, Technical Training
(Development)

J-DRAWINGS
MISCELLANEOUS TABLES

OBJECTIVES :

At the completion of this lesson, you will be able to :

Identify the information contained in these Tables.

Relate this information to other tables on the drawing.

Many J-Drawings will contain other Tables in addition to those already discussed. The information contained in these Tables will be of many different types and will vary considerably from drawing to drawing. For discussion purposes, all examples in this Lesson will be designated Table C.

A typical example of Table C is shown in Figure 1.

TABLE C (SEE NOTE 53)				
FRAME				
(UNITS SHALL BE EQUIPPED AND CONNECTED AS SPECIFIED IN THIS TABLE)				
UNIT CODE	UNIT CODE LIST	QUANTITY ALWAYS REQUIRED	QUANTITY FOR OPTIONS INDICATED	DESCRIPTION OF FEATURE OR OPTION
J00005AB-50	1,A		1	FOR THREE DIGIT TOLL CODES-1XX
	2		3	FOR THREE DIGIT TOLL CODES-1XX

FIG. 1

This Table states that a J-00005AB-50 unit is available as an option to provide Three Digit Toll Codes on List 1,A and List 2 units. One (1) J-00005AB-50 unit is required when used with List 1,A and three (3) units are required when used with List 2.

Notice that no quantity is shown in the "Quantity Always Required" Column.

This unit is optional in all cases.

Table C may also be used for Stamping Requirements.

Figure 2 shows an example of this arrangement of Table C.

TABLE C - ISSUE STAMPING			
LIST	SD ISS	LIST	SD ISS
3,WC	17,20	3,C,WD	17,20,21,24
4,B	17,20	4,D,WE	17,20,21,24
3,C	17,20,21	4E	21,23,24
4,D	17,20,21	3,C,WF	21,23,24
3,H	21,23,24,25,26	4,G	21,23,24,25
4,J	21,23,24 25,26,27	3,F	21,23,24,25

FIG. 2

This Table is being used to relate the List Numbers specified in Table A to the Schematic Drawing (SD) specified in the List of Associated Drawings.

For Example :

Table C in Figure 2 states that a List 3, WC shall be stamped Issue 17, 20.

If a unit, J-xxxxxA-1 List 3, WC, were to be wired in accordance with SD-xxxxx-01 Iss. 17, 20, then this stamping must appear on the J unit as SD-xxxxx-01 Iss. 17, 20.

Another example of Table C is shown in Figure 3.

TABLE C						
TRUNK UNITS SHALL BE EQUIPPED & CIRCUIT NO. STAMPED AS SPECIFIED IN THE TABLE						
LIST SPEC'D	TRUNK UNIT	MTG PLATE POSITION NO.		CIRCUIT NUMBER		REMARKS
		EQUIPPED	WIRED ONLY	EQUIPPED	WIRED ONLY	
29	J58824AY-1L-1,AB	5 TO 9		1 TO 10		
30		5 TO 8	9	1 TO 8	9,10	
31		5	6 TO 9	11,12	13 TO 20	
32			5 TO 9		11 TO 20	

FIG. 3

This Table specifies the following :

Trunk Units shall be equipped and Circuit Numbers stamped as specified in the Table.

The Table shown in Figure 3 states that a List 30 unit shall be equipped with a J58824AY-1 L-1, AB with Mounting Plate Position Numbers 5 to 8 Equipped and Mounting Plate Position Number 9 Wired Only. The Table also specifies that Circuit Numbers 1 to 8 shall be equipped and Circuit Numbers 9 and 10 Wired Only.

The three examples of Table C that have been discussed in this Lesson represent only a very small percentage of the types of information one may expect to find in these tables.

Although the examples used were designated Table C for purposes of discussion, they may appear on a drawing as Table C, D, E, etc.

Issued by
Manager, Technical Training
(Development)

ED-DRAWINGS
BASIC CONCEPTS

OBJECTIVES :

At the conclusion of this lesson, you will be able to :

Identify the basic differences which exist between ED and
J-Drawings.

Training Manual 1000 - Sec. 1-L7
Western Electric Company, Incorporated
Technical Training - Service Divisions

Western Electric Company Equipment Manufacturing Specifications (ED-Drawings) provide the Manufacturing Requirements for the Assembly and Wiring of Apparatus and Framework parts into units of equipment.

ED-Drawings are prepared to cover three (3) basic types of equipment.

1. Printed Wiring Boards.
2. Wired Equipment.
3. Framework Assemblies.

For some small wired units, the Wiring Diagram (shown in manufacturing schematic form) and the Equipment Layout may be combined on one ED-Drawing.

On other equipment, the layout may be shown on the ED-Drawing with no wiring diagram included. In this case, the SD-Drawing is to be used as the wiring diagram as well as the schematic.

When the ED-Drawing is a combination wiring diagram and equipment drawing, the information shall be prepared as follows :

The first group of sheets will be the Information sheet and shall be designated "A".

The second group of sheets will be the Wiring Diagram sheet and will be designated "B".

The third group of sheets will be the Equipment Portion and will be designated "C".

The Title Block on an ED-Drawing appears in the lower right corner of the drawing and contains the same type of information found on a J-Drawing.

The main difference is the drawing number and the dash (-) number. In the study of J-Drawings, it was found that -1, -2, -3, etc., were used to designate various vintages of the product. ED-Drawings also utilize a dash (-) numbering system to identify product vintage and type of drawing.

This system is defined as follows :

-10 to -29 partially piece parted drawings - All Types

Training Manual 1000 - Sec. 1-L7
Western Electric Company, Incorporated
Technical Training - Service Divisions

-30 to -49 and -130 to -149 partially piece parted drawings
for :

Small Wired Units

Amplas Equipment

Printed Wiring Boards.

-50 to -89 fully piece parted drawings

-90 to -129 assigned to Bell Laboratories.

Although other suffixes are sometimes used on the ED-Drawing, they are not common to the Repairman and will not be discussed in this lesson.

The suffix also indicates the vintage of the drawing. When the vintage of a drawing is changed, the next available dash (-) number is assigned to the new vintage. The vintage which has been replaced is rated Manufacture Discontinued and the ED number of the new drawing must be stamped on the discontinued drawing.

The Issue Number of the ED-Drawing is continuous from one vintage to the next.

Example :

If a -30 Iss. 4 drawing is replaced by a -31 vintage, the issue number of the drawing is Iss. 5.

Figures 1 and 2 show the change of vintage as would apply to ED-12345-30.

		5
ED-12345-31 DATA SYSTEMS CENTRAL OFFICE SPECIFICATION FOR B1 CARRIER DATA TERMINAL SUPERVISORY SIGNALING DEMULTIPLEXER CIRCUIT PACKAGE 16 PRINTED WIRING BOARD UNIT		A.T. & T. CO. RATING A.T. & T. CO. STANDARD W.E. CO. RATING STANDARD
WESTERN ELECTRIC COMPANY, INC.		ED-12345-31 DWG-SIZE 6S 2 SHEETS, SHEET 1

FIG. 1

REPLACED BY ED-12345-31		4
ED-12345-30 DATA SYSTEMS CENTRAL OFFICE SPECIFICATION FOR B1 CARRIER DATA TERMINAL SUPERVISORY SIGNALING DEMULTIPLEXER CIRCUIT PACKAGE 16 PRINTED WIRING BOARD UNIT		A.T. & T. CO. RATING MFR. DISC. W.E. CO. RATING MFR. DISC.
WESTERN ELECTRIC COMPANY, INC.		ED-12345-30 DWG-SIZE 6S 2 SHEETS, SHEET 1

FIG. 2

Figure 1 shows the new vintage of the drawing while Figure 2 shows the drawing which has been replaced.

6

Training Manual 1000 - Sec. 1-L7
 Western Electric Company, Incorporated
 Technical Training - Service Divisions

The ED Numbering System is shown below :

BASE NUMBERS		
10000 - 19999	MAN.	80000 - 89999 POWER
20000 - 24999	PAN.	90000 - 99999 COMMON
25000 - 29999	#1, #5	
	X-BAR	
30000 - 39999	SXS	1A000 - 1A999 ESS NO. 1 (2W)
40000 - 40999	AMA	2A000 - 2A999 ESS NO. 1 4-W
42000 - 42999	TV	3A000 - 3A999 ESS NO. 1
45000 - 46999	RADIO	DATA
50000 - 64999	TOLL	1B000 - 2B999 TRAF SERV 3B000 - 4B999 TRAF MGMT
65000 - 67999	PBX	1C000 - 1C299 COMMON
68000 - 68999	#4 X-BAR	(SPL)
69000 - 69999	STATION	3C000 - 3C499 COMMON
70000 - 74999	DATA - (CENTRAL OFFICE)	1D000 - 4D999 DATA (STATION)
1E000 - 1E999		1H000 - 1H999 ESS
5E000 - 5E499	PBX	NO. 101
1G000 - 4G999	PRIV. SERV	2H000 - 2H999 ESS NO. 2 1R000 - 1R011 RADIO
5G000 - 9G999	TOLL	2R000 - 2R999

The following areas of the ED-Drawing comply to the same general rules as set forth in the lessons on J-Drawings.

Sheet Index

Title Block (excluding drawing number)

Manufacturing Notes

Engineering Notes

List of Associated Drawings

Stock List

Table B (Drilling)

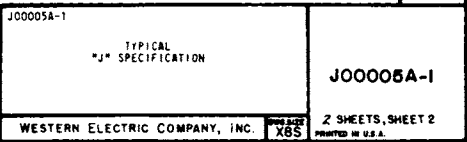
Supplementary Tables.

Table "A" on the ED-Drawing contains columns A thru H as does the J-Drawing. However, Column C does not contain the List NO. as on the J-Drawing but rather contains the Group Number. This is one of the most significant differences between J and ED units. ED Units will be coded Grp. 1, Grp. 2, etc., and will utilize Lettered List in the same manner as J-Drawings. All other columns in Table A contain the same type of information as apply to J-Drawings.

Issued by
Manager, Technical Training
(Development)

Section 1
Attachment A

TCI Library www.telephonecollectors.info



Section 1
Attachment C

TCI Library www.telephonecollectors.info

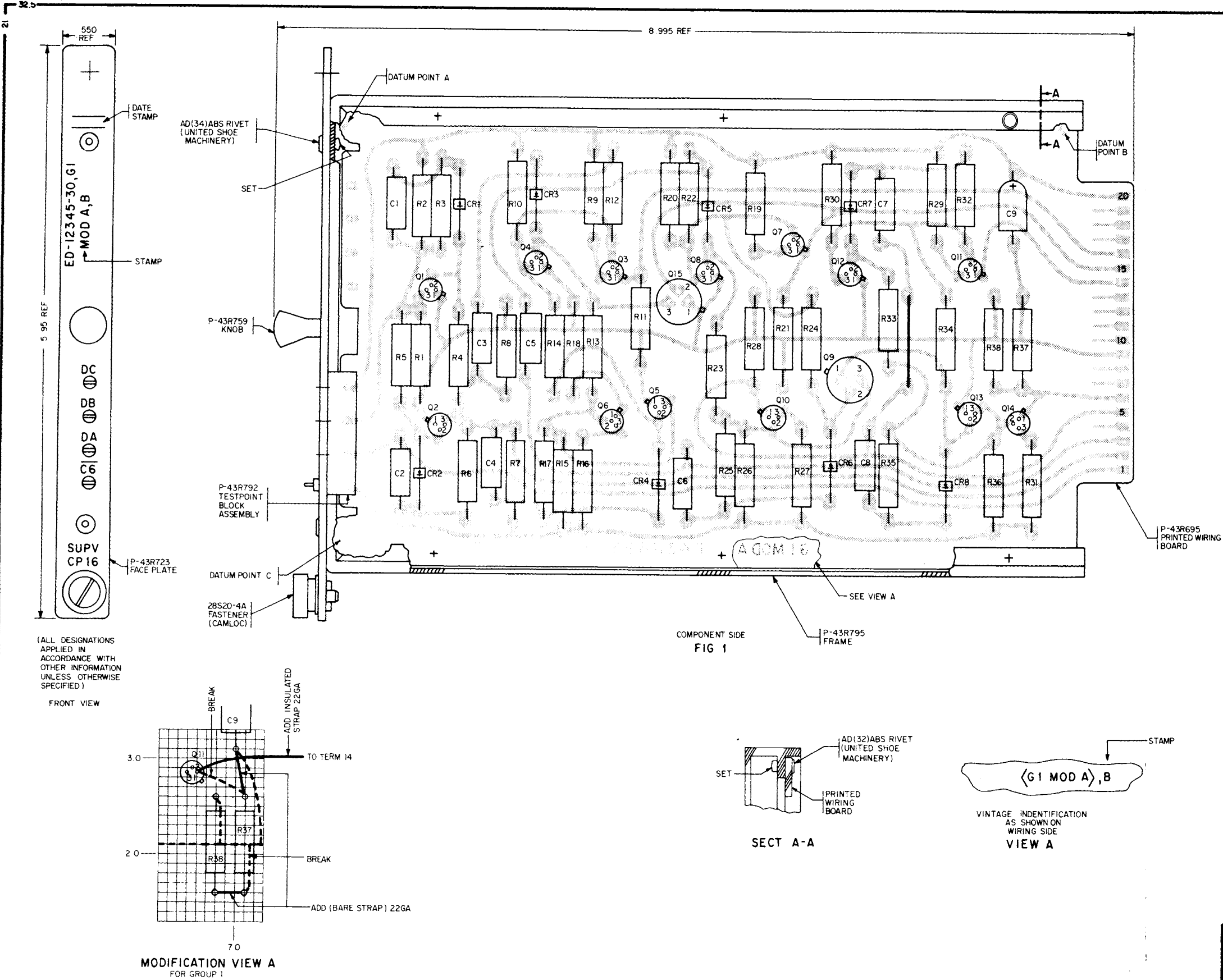


TABLE D				
COMPONENT DESIGNATION TABLE				
DESIG	CODE	VALUE	MTG	MOD
CAPACITORS				
C1, C2, C3, C4, C5, C6, C7, C8	KS-14056, L-7	470 UUF	8	
C9	601A	5UF		
DIODE				
CR1, CR2, CR3, CR4, CR5, CR6, CR7, CR8	432A		8	
RESISTORS				
R1, R8	221A	2670	OHMS	10
R2, R7, R10, R15, R20, R26, R30, R36		2370		
R3, R6, R12, R17, R22, R25, R32, R35		10,000		
R4, R5, R13, R14, R23, R24, R33, R34		4640		
R9, R16, R19, R27, R29, R37		133		
R11, R18, R21, R28, R31, R38		178		
TRANSISTORS				
Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8, Q10, Q11, Q12, Q13, Q14	16C			
Q9, Q15	12D			